

STRATEGIC PLAN

Arkansas Science & Technology Authority

Strategic Plan for the 2001-2003 Biennium

Introduction

The Arkansas Science & Technology Authority (Authority) is pleased to present its strategic plan for the 2001-2003 biennium. It is the summary product of the Authority's two-year planning activity.

Vision

The Authority believes that the economic well-being of Arkansas, its communities, and its citizens is enhanced through the wise and appropriate application of science and technology to security, health, education, government, business opportunities, agriculture, and environmental protection.

Mission

The mission of the Authority is to bring the benefits of science and advanced technology to the people and state of Arkansas.

The Board's Seven Goals

- Goal 1:** To increase per capita research and development (R&D) funding at colleges and universities by increasing the national competitiveness of Arkansas scientists in basic research.
- Goal 2:** To increase per capita R&D funding at colleges and universities by building a critical mass of research strength in research centers in the state.
- Goal 3:** To provide extension services to customers.
- Goal 4:** To develop innovative technology-based businesses while stimulating economic growth and global competition.
- Goal 5:** To help build the education infrastructure for the future.
- Goal 6:** To become more of an information agency.
- Goal 7:** To contribute to the preparation of a coherent research and development road map.

Board Recommendations

The Authority's Board of Directors has developed funding and policy recommendations as part of its Strategic Plan for the 2001-2003 biennium.

Funding Recommendations

After careful review of the state's investment in research and development over the last five years, and projecting demand through the 2001-2002 biennium, the Board recommends the following state investments for the 2001-2003 biennium:

Research Grants

From General Revenue Funds

Basic Research Grants:	\$593,750 per year
Applied Research Grants:	\$490,000 per year
Research Grants Total	\$1,083,750 per year

Arkansas Research Matching Fund

From General Improvement Funds

\$10 million for biennium

Technology Development

From General Revenue Funds

Technology Development:	\$150,000 per year
Virtual SBIR Investments	\$50,000 per year
Technology Transfer Assistance:	\$115,000 per year
Technology Total	\$315,000 per year

Manufacturing Extension Network

From Federal Funds

Network Services:	
FY02	\$1,210,000
FY03	\$1,240,000
Network Total	\$2,450,000
Network	
Technology Transfer Assistance:	\$200,000 per year

Seed Capital Investments

From Cash Funds (Seed Capital Investment Fund)

Seed Capital Investments	\$1.8 million per year
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Policy Recommendations

As part of its five-year review of the state's investment in research and development, the Board discussed several policy areas.

Manufacturing Extension Network

Recommendation (#1)

Institutionalize the Network (Network) to formalize the technical assistance provided by the Network to Arkansas enterprises under a state-federal technology partnership. Institutionalization involves a two-step process: (1) statutory recognition of the Network during the 2001 legislative session and (2) consideration in the 2003 legislative session of sustained (as opposed to ad hoc) state cost-sharing financial support for the 2003-2005 biennium.

Background

The Network is supported through a partnership between the National Institute of Standards and Technology (NIST, in the U.S. Department of Commerce), colleges and universities in Arkansas, the Arkansas Department of Economic Development (ADED), and the Arkansas Science & Technology Authority.

The partnership is embodied in a cooperative agreement between NIST and the Authority and partnerships between the Authority and ADED and between the Authority and college and university partners.

Recommendation (#2)

Create an incentive for Arkansas firms to participate in state technology-assistance programs and establish a mechanism to capture a return on successful technology projects to sustain operation of the program and provide the state match under state-federal technology partnerships.

Background

In 1999, the Network helped a manufacturer in Northwest Arkansas develop a new product line for a previously unexplored market segment. The manufacturer increased production, employment, and sales.

The recommended incentive would capture part of the increased state sales tax through a one-time (up to three-year) tax credit purchased at a discounted rate by the eligible taxpayer. The revenue would be deposited in the Technology Extension Fund (a cash fund) and used to (1) match the state's share of the manufacturing extension partnership and (2) carry out statutory technology extension activities.

Seed Capital Investments

Recommendation

Double the size of the Seed Capital Investment Fund.

Background

The Authority's Seed Capital Investment Fund (a cash fund) was created in 1985 with a one-time appropriation of \$1.9 million. These funds have been invested in companies commercializing new products so these firms would not have to leave the state to find risk capital. The availability of risk capital is limited, but not completely missing, in Arkansas. The Authority's revolving seed capital fund, however, is the only risk capital that is targeted for technology commercialization.

Accomplishments

Technology Development

The outcomes for the Technology Development Program include the success stories involving Safe Foods

Corporation, ContourMed, Space Photonics and AMDC. The first two of these companies were spun out of technologies originally developed at the University of Arkansas for Medical Sciences and further funded by the Authority. The other two

companies, tenants in the Genesis business incubator at the University of Arkansas, Fayetteville, were able to use Authority support to attract over \$1.382 million in Phase II SBIR research funds. All four are recent (under 3 years old) start-up companies.

Safe Foods has an interesting footnote to its success. According to a June 13, 2000 company press release, Cambrex Corporation announced that its “Zeeland Chemicals, Inc. subsidiary and Safe Foods Corporation, Little Rock, AR, have concluded an agreement for the manufacture and supply of Cecure™, a proprietary anti-bacterial formulation for food and food processing applications.” The press release went on to describe Cecure™ as a “food safety intervention, originally developed by researchers at the University of Arkansas.”

The Authority has been involved in developing this technology through both its Technology Development (98-TDP-01) and Applied Research (00-A-02) programs.

Seed Capital Investments

Two recent articles illustrate the important outcomes that result from the financial investments made by the Authority. An article in the July 24-27 issue of *Arkansas Business*, lists Kyle Parker, founder of Law Office Information Systems (LoisLaw) and former client of the Authority, among the “Wealthiest Arkansans” as a result of the success of his business, which is rewriting the way in which lawyers conduct legal research.

The other article, in the July 21 issue of the *Arkansas Times*, traces the history of LoisLaw. Part of the story is Kyle Parker getting started with the personal law books of then-Arkansas Supreme Court Chief Justice Jack Holt and a \$200,000 investment from the Authority in 1991. (The Authority made a second investment of \$200,000 in 1996.) LoisLaw has paid back both of the investments and, according to the *Times*, currently has 500 employees.

The Seed Capital Investment Program (SCIP) has invested a total of \$2,916,060 in 28 companies headquartered in 12 counties. These companies attracted additional financial support totaling \$17,652,062. According to information obtained from the U.S. Business Directory, these companies employee over 800 and have approximate annual revenues of \$53,430,000.

Arkansas Research Matching Fund

Research officials at the University of Arkansas, Fayetteville, indicate that total research funding for Fiscal Year 2000 is up at least 10 percent because of the availability of the Arkansas Research Matching Fund (established during the 1999 Legislative Session).

Research Grants

“I was very fortunate to obtain an Authority grant early in my work at the University of Arkansas, Fayetteville (UAF),” Steve Beaupre, Ph.D. and assistant professor in the Department of Biological Sciences, said.

Beaupre received a basic research grant of \$41,359 from the Authority in 1996. UAF matched the grant with \$30,177. “Titled ‘Physiological Ecology of Native Arkansas Snakes,’ the basic idea was to gather baseline information on snake populations concerning how environmental factors (such as food availability and temperature) affect behavior, growth, and reproduction,” Beaupre explained. “To make a long story short, the grant – along with my start-up funds from the University – put me in perfect position to gain the required preliminary data to secure a reasonably large grant from the National Science Foundation (NSF). The NSF grant was for \$200,000. Beaupre is confident that without the Authority, his research would have been delayed and possibly even sidelined. “I don’t believe I would have been competitive, or at least it would have taken me much longer to acquire the required data. The funding allowed me to identify several workable populations, and provided some tantalizing data that really pushed my NSF application over the top.”

In addition to the research, the grants allowed Beaupre to directly or indirectly support, train, and mentor eight undergraduate students. “Two of these undergraduates have gone on to advanced degrees in biological sciences. One is currently in the masters program in Entomology at UAF, the other is in the Ph.D. program at the University of Pennsylvania, Department of Biology,” he said.

Beaupre said one student’s honors thesis was a direct result of Authority funding, and is being published in a top tier journal in his field of study. Another undergraduate associated with the project has received his secondary education certification for teaching science through the University of Arkansas School of Education. The student recently returned to Beaupre, expressing an interest in the Graduate Teaching Fellows in K-12 Education program and continued research involvement.

Authority funds also facilitated the involvement of two Arkansas science teachers in research through the Arkansas Science Teachers Research Involvement for Vital Education (STRIVE) program.

Technology Transfer Assistance

Technology transfer mini-grants help companies address their technological needs. The Authority has had great success in using Technology Transfer Assistance Grants (TTAG) to help Arkansas firms compete for federally funded Small Business Innovation Research awards. The success of these companies is responsible for Arkansas increasing its national SBIR rankings from 50th in 1997 to a projected mid-thirties for 1999, based on a record year where Arkansas companies received over \$2.7 million in federal SBIR funding.

One such company is Digital Infrared Access (DIA), which learned about the SBIR Program through a workshop sponsored by the Authority and the Arkansas Small Business Development Center. DIA’s technology is based on a novel high-fidelity, multi-channel communication device with applications for the hearing impaired and in multiple-language venues. Looking for a way to pursue its research agenda and needing assistance in competing for these federal research and development dollars, DIA approached the Authority, which

had helped launch the company in 1999 with a \$100,000 seed capital investment. The Authority invested \$2,500 through the TTAG Program for the preparation of a research proposal for submission to the National Institutes of Health.

The company recently learned it will be awarded \$99,000 to study the ability of their technology to transmit data from a source such as a court reporter's keyboard (or laptop computer) to a hand-held device resembling a Palm Pilot™.

Manufacturing Extension Network

The state's Manufacturing Extension Network provides on-site technological assistance to existing manufacturers.

Over the past few years the Network has been working diligently to help manufacturers increase their competitiveness and productivity.

Survey research by the Census Bureau and MarketFacts (a firm hired by NIST) shows that the Network has helped companies realize a \$13.2 million increase in sales and a \$1.04 million cost savings in labor and material. The research also suggests that Arkansas manufacturers are reporting a total of 896 jobs, either created or retained, and \$239,000 in investment savings as a result of Network projects.

Next Steps

The Authority recognizes the importance of its strategic plan, but the plan represents the end point in the current planning cycle. Perhaps more importantly, finalizing the plan also marks a beginning, the start of a new planning cycle. For the next two years, the Authority will be engaged in developing the next strategic plan.

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